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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/759,842	01/12/2001	Selim Shlomo Rakib	TER-002.3P DS	3183
26717	7590	06/07/2005	EXAMINER	
RONALD CRAIG FISH, A LAW CORPORATION PO BOX 820 LOS GATOS, CA 95032			SAM, PHIRIN	
			ART UNIT	PAPER NUMBER
			2661	

DATE MAILED: 06/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/759,842	RAKIB ET AL.	
	Examiner	Art Unit	
	Phirin Sam	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 12 January 2001.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 84-97 is/are pending in the application.
- 4a) Of the above claim(s) 1-83 is/are withdrawn from consideration.
- 5) Claim(s) 84-93 is/are allowed.
- 6) Claim(s) 94 is/are rejected.
- 7) Claim(s) 95-97 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.



Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>051002 and 042301</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Claim Objections

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 1-14 have been renumbered 84-97 respectively. ***Claim Rejections -***

35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 94 is rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 4,980,897 (hereinafter referred as “Decker”).

Decker discloses the invention (claim 94) as claimed including a process for Trellis encoding a plurality of payload bits into a constellation point, comprising:

(a) receiving a plurality of payload bits (see Figs. 4 and 6, col. 5, lines 50-53). Wherein Trellis Encoder receives payload bits X_m-X_{k+1} and X_k-X_1 ;

(b) convolutionally encoding a combination of said payload bits into one or more additional bits by applying said payload bits to different inputs of a convolutional encoder (see Fig. 6, element 93, col. 6, lines 17-20, wherein convolutional encoder 93 encodes X_2-X_1) and also

applying a modified bit to an input of said convolutional encoder, said modified bit being generated by exclusive-ORing one of said payload bits with an output bit from an intermediate stage of said convolutional encoder, said convolutional encoding step resulting in output of one or more additional bits (see Fig. 6, col. 6, lines 22-29, 65-67, wherein XOR generated the modified bits in convolutional encoder 93 at the input of convolutional encoder);

(c) mapping the combination of at least some of said payload bits in an unmodified state, said modified bit and said one or more additional bits into a constellation point (see Figs. 4 and 6, elements X_m-X₃, Z₂-Z₀, and 72, col. 6, lines 57-61, wherein the unmodified bits X_m-X₃ and modified Z₂-Z₀ are mapped into 72).

Allowable Subject Matter

4. Claims 84-93 are allowed.
5. Claims 95-97 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
 - (1) US Patent 5,953,376 (Wei) discloses probabilistic trellis coded modulation with PCM-derived constellations.
 - (2) US Patent 5,774,500 (Zogakis et al) discloses multi-channel trellis shaper.
 - (3) US Patent 5,621,761 (Heegard) discloses rotationally invariant Trellis coding incorporating transparent binary convolutional codes.

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(4) US Patent 5,757,856 (Fang) discloses differential coder decoder for pragmatic approach
Trellis coded 8-PSK modulation.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phirin Sam whose telephone number is (571) 272-3082. The examiner can normally be reached on Mon-Fri, 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T. Nguyen can be reached on (571) 272 - 3126. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Respectfully submitted,

Date: June 4, 2005



PHIRIN SAM
PRIMARY EXAMINER